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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,923	10/01/2003	Bruno M. LaFontaine	H1567	8295
45305	7590	05/31/2005	EXAMINER	
RENNER, OTTO, BOISSELLE & SKLAR, LLP (AMDS) 1621 EUCLID AVE - 19TH FLOOR CLEVELAND, OH 44115-2191			ROSASCO, STEPHEN D	
			ART UNIT	PAPER NUMBER

1756

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,923

Applicant(s)

LAFONTAINE ET AL

Examiner

Stephen Rosasco

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-37 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/8/04
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

Detailed Action

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Chapman et al. (6,875,543) or La Fontaine et al. (6,645,679) or Yan (6,562,522).

The claimed invention is directed to a reflective reticle and a method of using, the reticle comprises a substrate that includes an absorptive material; and

- a reflector on the substrate;
- wherein the reflector includes a plurality of reflective layers;
- wherein the reticle includes a first reflective region for reflecting radiation in a first phase;
- wherein the reticle includes a second reflective region for reflecting radiation in a second phase that is different than the first phase;
- wherein the reticle includes an absorptive region; and
- wherein the reflector has more of the reflective layers in one of the reflective regions than in the other of the reflective regions.

Chapman et al. teach a method for fabricating a phase shifting mask for EUV lithography, wherein said mask comprises a substrate with a reflective multilayer coating

attached thereto, the method comprising directly etching material away from said multilayer coating to produce a desired refractive phase shift in said mask, wherein the multilayer coating that was under the portion that was etched away is unchanged, wherein said desired phase change is equal to $4\pi(1-n)h/\lambda$, where h is the mount of material etched from the multilayer, n is the average refractive index of the multilayer and λ is the wavelength of light to be reflected.

And wherein the step of directly etching is carried out with an energy source selected from the group consisting of an ion beam, a laser beam, an atomic beam and an electron beam.

La Fontaine et al. teach a mask for integrated circuit fabrication equipment, the mask comprising; a multilayer film at least partially reflective to radiation having a wavelength of less than 70 nanometers, the multilayer film having locally modified portions, the locally modified portions being differently reflective at actinic wavelengths than non-locally modified portions; a buffer layer disposed above the multilayer film; and an absorbing layer disposed above the buffer layer, wherein the absorbing layer and the buffer layer include an aperture exposing at least one of the locally modified portions.

And wherein the locally modified positions are formed by a heat treatment step.

And wherein the heat treatment step utilizes a beam of electrons.

Yan teach a process for fabricating a photomask, comprising: depositing a first film on top of a substrate, said first film having a first thickness of a particular material; depositing a second film on top of said first film, said second film having a second thickness of another material; patterning a resist to form a resist pattern; and etching said first and

Art Unit: 1756

second films according to said resist pattern, where said first and second thicknesses are configured to provide specified attenuation and phase shift, wherein both the particular material and the another material modify the attenuation and phase shift, and wherein said first and second thicknesses, are represented by $d_{sub\ 1}$ and $d_{sub\ 2}$ respectively.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'S. Rosasco', with a stylized, elongated initial 'S'.

S. Rosasco
Primary Examiner
Art Unit 1756

S. Rosasco
05/17/05